

Scientific Publishing's Wild West

Keeping the Pool Clean

July 20, 2016

Adam Marcus

Co-Founder, Retraction Watch

Managing Editor, *Gastroenterology & Endoscopy News*

@retractionwatch

Code Brown



Publish or Perish

NEWS FEATURE



THE PEER-REVIEW SCAM

When a handful of authors were caught reviewing their own papers, it exposed weaknesses in modern publishing systems.

BY CAT FERGUSON, ADAM MARCUS AND IVAN GRANSKY

Most journal editors know how much effort it takes to persuade busy researchers to review a paper. That is why the editor of *The Journal of Enzyme Inhibition and Medicinal Chemistry* was puzzled by the reviews for manuscripts by one author — Hyung-In Moon, a medicinal-plant researcher how to improve the papers. What was unusual was how quickly they were completed — often within 24 hours. The turnaround was a little too fast, and Claudio Supuran, the journal's editor-in-chief, started to become suspicious.

In 2012, he confronted Moon, who readily admitted that the reviews had come in so

ILLUSTRATION BY BALEY HANNAH BIRN

Fake Peer Review Watch

The number of papers retracted for rigged peer review since 2012 is:

?

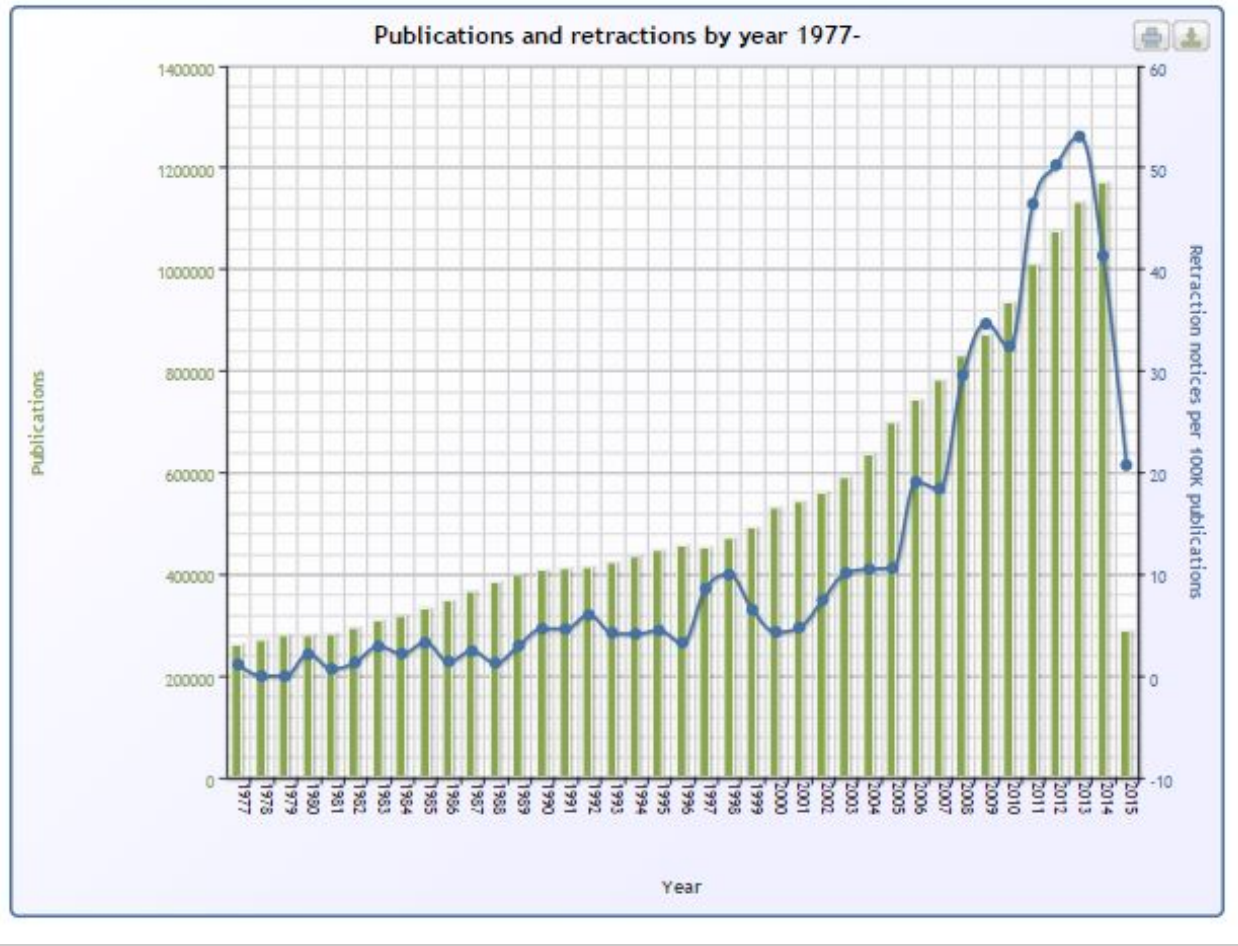
Fake Peer Review Watch

The number of papers retracted for rigged peer review since 2012 is:

>300

Retractions on the Rise

PubMed Retraction Notices - By Year



Moving Mountains



A tragedy of errors

Mistakes in peer-reviewed papers are easy to find but hard to fix, report **David B. Allison** and colleagues.

Allison et al Nature 2016 <http://www.nature.com/news/reproducibility-a-tragedy-of-errors-1.19264>

Common Reasons for Retractions

- Duplication (“self-plagiarism”)
- Plagiarism
- Image Manipulation
- Faked Data
- Fake Peer Reviews
- Publisher Error
- Authorship Issues
- Legal Reasons
- Not Reproducible

Most Retractions Due to Misconduct

Misconduct accounts for the majority of retracted scientific publications

Ferric C. Fang^{a,b,1}, R. Grant Steen^{c,1}, and Arturo Casadevall^{d,1,2}

Departments of ^aLaboratory Medicine and ^bMicrobiology, University of Washington School of Medicine, Seattle, WA 98195; ^cMediCC! Medical Communications Consultants, Chapel Hill, NC 27517; and ^dDepartment of Microbiology and Immunology, Albert Einstein College of Medicine, Bronx, NY 10461

Edited by Thomas Shenk, Princeton University, Princeton, NJ, and approved September 6, 2012 (received for review July 18, 2012)

A detailed review of all 2,047 biomedical and life-science research articles indexed by PubMed as retracted on May 3, 2012 revealed that only 21.3% of retractions were attributable to error. In contrast, 67.4% of retractions were attributable to misconduct, including fraud or suspected fraud (43.4%), duplicate publication (14.2%), and plagiarism (9.8%). Incomplete, uninformative or misleading retraction announcements have led to a previous underestimation of the role of fraud in the ongoing retraction epidemic. The percentage of scientific articles retracted because of fraud has increased ~10-fold since 1975. Retractions exhibit distinctive temporal and geographic patterns that may reveal underlying causes.

bibliometric analysis | biomedical publishing | ethics | research misconduct

The number and frequency of retracted publications are important indicators of the health of the scientific enterprise, because retracted articles represent unequivocal evidence of project failure, irrespective of the cause. Hence, retractions are worthy of rigorous and systematic study. The retraction of flawed publications corrects the scientific literature and also provides insights into the scientific process. However, the rising frequency of retractions has recently elicited concern (1, 2). Studies of selected retracted articles have suggested that error is more common than fraud as a cause of retraction (3–5) and that rates of retraction correlate with journal-impact factor (6). We undertook

published by the authors of a manuscript in the *Journal of Cell Biology* stated that “In follow-up experiments . . . we have shown that the lack of FOXO1a expression reported in figure 1 is not correct” (11). A subsequent report from the Office of Research Integrity states that the first author committed “research misconduct by knowingly and intentionally falsely reporting . . . that FOXO1a was not expressed . . . by selecting a specific FOXO1a immunoblot to show the desired result” (12). In contrast to earlier studies, we found that the majority of retracted articles were retracted because of some form of misconduct, with only 21.3% retracted because of error. The most common reason for retraction was fraud or suspected fraud (43.4%), with additional articles retracted because of duplicate publication (14.2%) or plagiarism (9.8%). Miscellaneous reasons or unknown causes accounted for the remainder. Thus, for articles in which the reason for retraction is known, three-quarters were retracted because of misconduct or suspected misconduct, and only one-quarter was retracted for error.

Temporal Trends. A marked recent rise in the frequency of retraction was confirmed (2, 13), but was not uniform among the various causes of retraction (Fig. 1A). A discernible rise in retractions because of fraud or error was first evident in the 1990s, with a subsequent dramatic rise in retractions attributable to fraud occurring during the last decade. A more modest increase

PNAS PNAS PNAS

MEDICAL SCIENCES

Who Retracts?

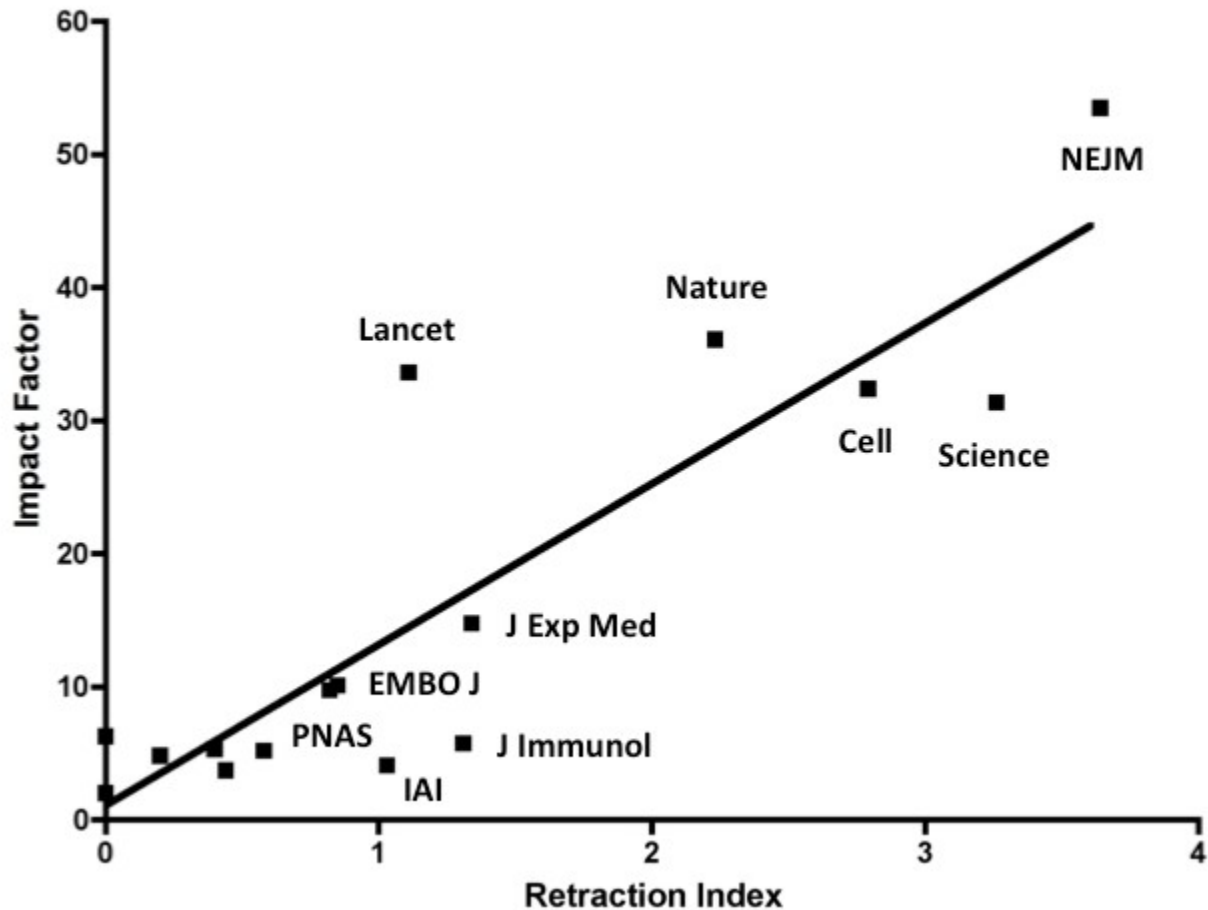
The Retraction Watch Leaderboard

with 18 comments

Who has the most retractions? Here's our unofficial list (see notes on methodology), which we'll update as more information comes to light:

1. [Yoshitaka Fujii](#) (total retractions: 183) Sources: [Final report of investigating committee](#), [our reporting](#)
 2. [Joachim Boldt](#) (94) Sources: [Editors in chief statement](#), [additional coverage](#)
 3. [Diederik Stapel](#) (58) Source: [Our cataloging](#)
 4. [Adrian Maxim](#) (48) Source: [IEEE database](#)
 5. [Peter Chen](#) (Chen-Yuan Chen) (43) Source: [SAGE](#), [our cataloging](#)
 6. [Hua Zhong](#) (41) Source: [Journal](#)
 7. [Shigeaki Kato](#) (39) Source: [Our cataloging](#)
 8. [James Hunton](#) (37) Source: [Our cataloging](#)
 9. [Hendrik Schön](#) (36) Sources: PubMed and Thomson Scientific
 10. [Hyung-In Moon](#) (35) Source: [Our cataloging](#)
-

Which Journals Retract?



What Happens to Retracted Papers' Citations?

Budd et al, 1999:

- Retracted articles received more than 2,000 post-retraction citations; less than 8% of citations acknowledged the retraction
- Preliminary study of the present data shows that continued citation remains a problem
- Of 391 citations analyzed, only 6% acknowledge the retraction

What Happens to Retracted Papers' Citations?

Retracted Publications in Biomedicine: Cause for Concern

John M. Budd, Zach C. Coble and Katherine M. Anderson

Abstract

Retractions of articles and citations to retracted work continue to be a cause for concern. In 1999, Budd et al. found 235 retracted publications in the biomedical literature for a 30-year period. Nearly 40% were retracted because of misconduct. The current study found 1,164 retracted articles in the 12-year period between 1997 and 2009. Of the 1,112 articles included for analysis, 55% were retracted for some type of misconduct. While this number represents a small minority of the total number of publications in biomedicine, it is still substantial, and the impact of the retracted works can be significant. In PubMed, notifications of retractions

error and (especially) misconduct, the current study is intended to alert information professions and information users about the challenges inherent in the literatures of many fields, particularly biomedicine.

Introduction

At times and for a variety of reasons, it can be necessary for a published article to be retracted. While retracted articles represent a small minority of all published articles, there is continued concern about the phenomenon of retraction. In a recent report in the *Times Higher Education*, Corbyn notes that the rate at which scientific articles are retracted has increased

The Most Highly Cited

Article	Year of retraction	Cites before retraction	Cites after retraction	Total cites from journals indexed by Web of Science
<p>1. Visfatin: A protein secreted by visceral fat that mimics the effects of insulin. SCIENCE, JAN 21 2005</p> <p><i>Fukuhara A, Matsuda M, Nishizawa M, Segawa K, Tanaka M, Kishimoto K, Matsuki Y, Murakami M, Ichisaka T, Murakami H, Watanabe E, Takagi T, Akiyoshi M, Ohtsubo T, Kihara S, Yamashita S, Makishima M, Funahashi T, Yamanaka S, Hiramatsu R, Matsuzawa Y, Shimomura I.</i></p>	2007	247	776	1023
<p>2. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. LANCET, FEB 28 1998</p> <p><i>Wakefield AJ, Murch SH, Anthony A, Linnell J, Casson DM, Malik M, Berelowitz M, Dhillon AP, Thomson MA, Harvey P, Valentine A, Davies SE, Walker-Smith JA.</i></p>	2010	675	308	983
<p>3. An enhanced transient expression system in plants based on suppression of gene silencing by the p19 protein of tomato bushy stunt virus. PLANT JOURNAL, MAR 2003</p> <p><i>Voinnet O, Rivas S, Mestre P, Baulcombe D.</i></p>	2015	897	N/A	897

Who's Harmed?

Retraction Watch

Tracking retractions as a

No academic matter: Study links retractions to patient harm

without comments

Flawed research that leads to retractions is a problem for editors, publishers and the scientific community. But what about patients?

In a recent issue of the *Journal of Medical Ethics*, R. Grant Steen asks the question — and answers it in the affirmative.

We've [heard from Steen before](#); he has written two recent papers on the scope of retractions, finding that the number of retractions [seems to be rising faster](#) than the number of publications on the shelves.

This time, Steen takes a crack at ferreting out what he calls “harm by influence,” the admittedly subtle effect that troubled studies have on downstream research. His findings certainly raise concerns.



Do Journals Get the Word Out?



The screenshot shows the website for the Journal of Medical Ethics. The header features the journal's name in a purple banner. Below the header is a navigation menu with buttons for 'Online First', 'Current issue', 'Archive', 'About the journal', and 'Submit'. A secondary navigation bar includes 'Online First', 'Current issue', 'Archive', 'Supplements', 'eLetters', 'Topic collections', and 'Blog'. The breadcrumb trail reads 'Home > Online First > Article'. The article title is 'Retractions in the scientific literature: is the incidence of research fraud increasing?' by R Grant Steen. The correspondence information is provided at the bottom of the article preview.

Journal of
MEDICAL ETHICS

An international peer-reviewed journal for health professionals and researchers in medical ethics

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J Med Ethics doi:10.1136/jme.2010.040923

Research ethics

Retractions in the scientific literature: is the incidence of research fraud increasing?

R Grant Steen

Correspondence to
R Grant Steen, Medical Communications Consultants, LLC 103 Van Doren Place, Chapel Hill, NC 27517, USA; g_steen_medicc@yahoo.com

Do Journals Get the Word Out?



“Journals often fail to alert the naïve reader; 31.8% of retracted papers were not noted as retracted in any way.”

R Grant Steen

Correspondence to

R Grant Steen, Medical Communications Consultants, LLC 103 Van Doren Place, Chapel Hill, NC 27517, USA; g_steen_medicc@yahoo.com

The Euphemisms

an “approach”

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“significant originality issue”

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“inadequate procedural or methodological practices of citation or quotation,” causing an “unacceptable level of text parallels”

The Euphemisms

- an “approach”
- “significant originality issue”
- “inadvertently copied text”
- “inadequate procedural or methodological practices of citation or quotation,” causing an “unacceptable level of text parallels”
- “Some sentences...are directly taken from other papers, which could be viewed as a form of plagiarism”

The Euphemisms

“As far as we’re concerned, there are similar words that were used, we’ve said that, but the feelings of those words and the commonality of those words do not create a situation which we feel we have to agree with you.”

Is This A Useful Retraction Notice?

“At the request of the authors, the following manuscript has been retracted:” [citation]

-Journal of Neuroscience

Why The Opacity?

Tracking retractions as a

Retraction Watch

Nature, facing “considerable rise” in retractions, blames lawyers for opaque and delayed notices

with 19 comments

Nature, as [we](#) and [others](#) have noticed, has had what Paul Knoepfler referred to as a “[torrent](#)” of retractions in the past two years. That torrent — 13 research papers — has prompted a welcome and soul-searching editorial, as it [did in 2010](#) when the journal had what it called an “unusually large number” of 4.

As the editors write this week in “[Retraction challenges](#):

“ For years, with occasional exceptions, *Nature’s* annual number of research-paper retractions tended to average around one or two. But over the past two years, we have seen a considerable rise — six in 2013, and seven, so far, in 2014. We have reviewed these and previous retractions and would like to make some observations on the basis of their content and on the experiences of publishing them.

We thought it would be useful to unpack some of the claims in the editorial. First:

“ A high proportion of *Nature’s* retractions in recent years have come about through honest error, where authors have either discovered mistakes themselves after publication, or have had the errors brought to their attention and taken action.




Now This Is Good News

The JBC's practice of saying very little in retraction and withdrawal notices has been described by many in the community as opaque—and rightfully so. After reviewing the practices of other journals and consulting with our legal counsel and publications committee, **we've reconsidered our approach. JBC retraction and withdrawal notices now will explain, with as much detail as possible, why papers have been withdrawn or retracted.**

-Journal of Biological Chemistry

What Should Retraction Notices Look Like?



COMMITTEE ON PUBLICATION ETHICS

RETRACTION GUIDELINES

Summary

Journal editors should consider retracting a publication if:

- they have clear evidence that the findings are unreliable, either as a result of misconduct (e.g. data fabrication) or honest error (e.g. miscalculation or experimental error)
- the findings have previously been published elsewhere without proper crossreferencing, permission or justification (i.e. cases of redundant publication)
- it constitutes plagiarism
- it reports unethical research

Journal editors should consider issuing an expression of concern if:

- they receive inconclusive evidence of research or publication misconduct by the authors

Post-Publication Peer Review on the Rise

Tracking retractions as a

Retraction Watch

PubPeer strikes again: Leukemia paper retracted for image duplications

with 4 comments

In July, a PubPeer commenter called out a paper in *Biochimica et Biophysica Acta* for image duplication; by September, the paper was retracted for the exact reason detailed in the anonymous comment.

Here's the [notice](#) for "Effect of ST3GAL 4 and FUT 7 on sialyl Lewis X synthesis and multidrug resistance in human acute myeloid leukemia," a paper initially published in June:

“

This article has been retracted at the request of the authors. It contained several inappropriately processed and incorrect Figures. On behalf of all authors, the corresponding author has taken full responsibility and apologizes to the readers of BBA Molecular Basis of Disease for submitting and publishing the erroneous article and any inconvenience caused.

An anonymous PubPeer commenter [compiled the following criticism](#) (click [here](#) or on the picture below for a larger image):

Concern about Figures 3, 5, and 7:





The data detective

Uri Simonsohn explains how he uncovered wrongdoing in psychology research.

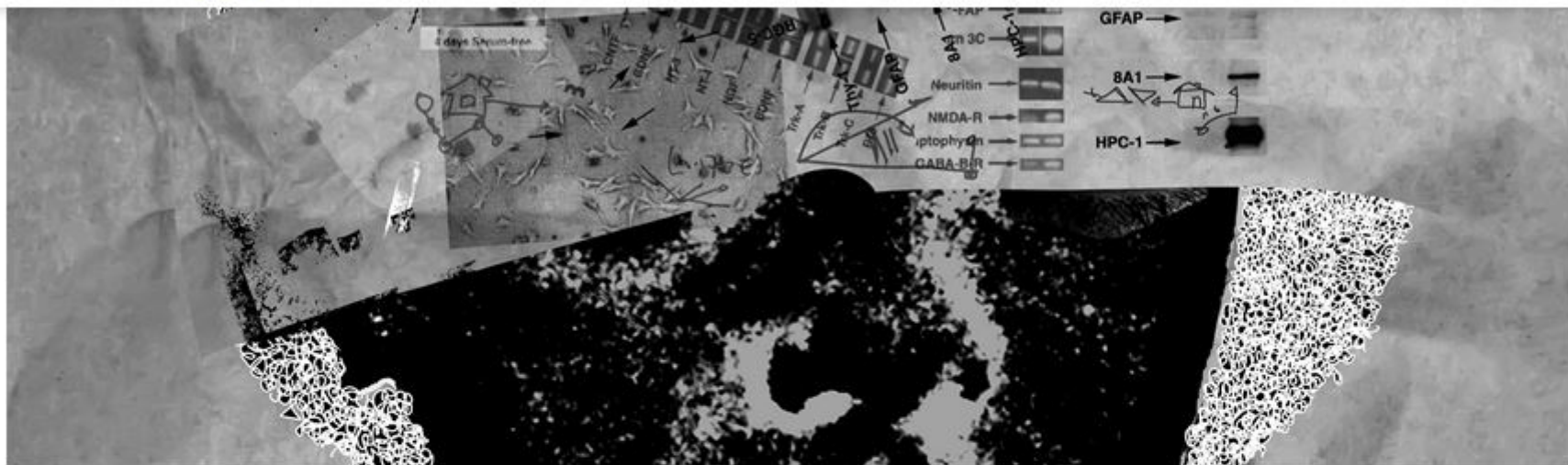
[Ed Yong](#)

03 July 2012



Psychology was already under scrutiny following a series of high-profile controversies. Now it faces fresh questions over research practices that can sometimes produce eye-catching — but irreproducible — results. Last week, Erasmus University Rotterdam in the Netherlands said that social psychologist Dirk Smeesters had resigned after an investigation found that he had massaged data to produce positive outcomes in his research.





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How the Biggest Fabricator in Science Got Caught

Yoshitaka Fujii falsified 183 papers before statistics exposed him.

BY ADAM MARCUS & IVAN ORANSKY
ILLUSTRATION BY LOUISA BERTMAN
MAY 21, 2015

Catching Fujii



Anaesthesia

Journal of the Association of Anaesthetists of Great Britain and Ireland

Special Article

Calculating the probability of random sampling for continuous variables in submitted or published randomised controlled trials



J. B. Carlisle Consultant^{1,*}, F. Dexter Director², J. J. Pandit Consultant³, S. L. Shafer Professor⁴ and S. M. Yentis Consultant⁵

Version of Record online: 29 MAY 2015

DOI: 10.1111/anae.13126

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Issue



Anaesthesia

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This article is accompanied by an editorial: <http://onlinelibrary.wiley.com/doi/10.1111/anae.13165>

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Reproducibility Initiative receives \$1.3M grant to validate 50 landmark cancer studies

October 16, 2013 | Posted by Elizabeth in [Science Exchange News](#) |  View 0 Comments



Rewarding Reproducible Research... submit your publication to opt in

Over a year ago, I began my mission to improve scientific reproducibility. I created the Reproducibility Initiative with [PLOS](#), [figshare](#), and [Mendeley](#) to provide a mechanism for scientists to independently replicate findings and be rewarded for doing so. We have made great strides in our effort such as the validation of more than 1000 antibodies for [antibodies-online](#). However, today is the day that I have made progress very near and dear to my heart. The Reproducibility Initiative has received a \$1.3 million grant from the Laura and John Arnold Foundation to validate 50 landmark cancer biology studies.

Not Everyone Is Happy

Plant Physiology

PubPeer takes an altogether more sinister tone, however, in its self-proclaimed authority to represent the scientific community and give “referees and members of committees for recruitment, promotion or funding ... [the community’s] opinions about the quality and reliability of applicants’ research.”² Legitimate authority demands consensual recognition and identity, both currently lacking for PubPeer. As scientists, we recognize the authority that comes with knowledge and expertise. We expect the identities of those who wield authority to be in the public domain.

founders.

PubPeer operates as a blog on which anyone can post comments, either to a published article or to comments posted by other participants, and authors may respond. It is a bit

■ Citing articles via CrossRef

Not Everyone Is Happy

Retraction Watch

Tracking retractions as

Lawsuit against Ole Miss for rescinded Sarkar job offer dismissed; briefs filed in PubPeer case

without comments

We recently obtained court documents showing that, in September, a judge dismissed a lawsuit filed by cancer researcher [Fazlul Sarkar](#) against the University of Mississippi after it rescinded a job offer after reviewing [concerns raised about his research on PubPeer](#).

Sarkar's connection to PubPeer will be familiar to many readers — he has also [taken the site to court](#) to force them to reveal the identity of the anonymous commenters who have questioned his findings. He has accused the commenters of defamation, arguing they cost him the job offer. Today, the American Civil Liberties Union [filed a brief on behalf of](#)



Crime Doesn't Pay Anymore

The Des Moines Register
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Ex-ISU scientist sentenced to 57 months in prison

 **Tony Leys**, tleys@dmreg.com 5:52 p.m. CDT July 1, 2015

 88
 35
 2
 3


(Photo: Associated Press file photo)

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A former Iowa State University scientist whose fraudulent research cost the government millions of dollars was sentenced Wednesday to four years and nine months in federal prison.

Dong-Pyou Han, 58, admitted he faked results in AIDS-vaccine experiments, whose supposed success drew up to \$20 million in extra federal grants. The case has made waves

DRAMA-FREE CAR SHOPPING

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And No One Wants it To

Retraction Watch

Tracking retractions as a wire

Vast majority of Americans want to criminalize data fraud, says new study

with 17 comments

As Retraction Watch readers know, criminal sanctions for research fraud are extremely rare. There have been just a handful of cases — [Dong-Pyou Han](#), [Eric Poehlman](#), and [Scott Reuben](#), to name several — that have led to prison sentences.

According to a new study, however, the rarity of such cases is out of sync with the wishes of the U.S. population:

“

[T]he public overwhelmingly judges both data fraud and selective reporting as morally wrong, and supports a range of serious sanctions for these behaviors. Most notably, the vast majority of Americans support criminalizing data fraud, and many also believe the offense deserves a sentence of incarceration.



Doing The Right Thing Is More Than Its Own Reward

Retraction Watch

Tracking retraction process

Doing the right thing: Scientists reward authors who report their own errors, says study

with 7 comments

We've always like to [highlight cases](#) in which scientists [do the right thing](#) and retract problematic papers themselves, rather than being forced to by editors and publishers. Apparently, according to a new paper by economists and management scholars, scientists reward that sort of behavior, too.

The study by [Benjamin Jones](#) of the Kellogg School of Management at Northwestern University and the National Bureau of Economic Research and colleagues, "[The Retraction Penalty: Evidence from the Web of Science](#)," was published yesterday in *Scientific Reports*, a Nature Publishing Group title.

The authors lay out what they do:

In this paper, we draw on all retraction notices in the Web of Science (WOS) database. We focus on the



Contact Info/Acknowledgements

Adam.marcus1@gmail.com

<http://retractionwatch.com>

@retractionwatch

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